U.S. Department of Justice

Federal Bureau of Investigation

Washington, D. C. 20535-0001

July 13, 2009

Mr. William C. Early
Acting Regional Administrator
Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, Pennsylvania 19103

Attention: Mr. Kyle Chelius

Re: Classroom Building 5
FBI Academy
Quantico, Virginia

Dear Mr. Early:

This letter transmits a second revised submission of the attached "Hybrid Plan for Self-Implementing On-site Cleanup and Disposal of PCB Remediation Waste From The HVAC System, Building 5". This revised submission incorporates comments and suggestions from discussions with Kyle Chelius, TSCA Compliance officer and Alizabeth Olhasso, EPA PCB Compliance Officer, and also contains updates on our efforts to comply with EPA regulations since our previous submission dated April 13, 2009.

The FBI requests that the EPA review, comment and approve the attached document, so that the removal of the PCB-containing HVAC units can proceed on a timely schedule.

Should you have any questions regarding this matter please contact Scott A. Bohnhoff, Unit Chief, Occupational Safety Environmental Protection, Facilities & Logistics Services Division, Washington, DC 20535, office telephone (202) 962-9183, e-mail: scott.bohnhoff@ic.fbi.gov.

Sincerely,

Patrick G. Findlay, P.E.
Assistant Director
Facilities and Logistics
Services Division

Enclosure
MS:ms(13)

HYBRID PLAN
FOR
SELF-IMPLEMENTING ON-SITE CLEANUP AND DISPOSAL OF PCB REMEDIATION WASTE FROM THE HVAC SYSTEM, BUILDING 5 FEDERAL BUREAU OF INVESTIGATION QUANTICO COMPLEX VIRGINIA

Submitted by:

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Submitted to:

Mr. William Early, Acting Regional Administrator
c/o Mr. Abraham Ferdas, Director
U.S. Environmental Protection Agency, Region III
Land and Chemicals Division (3LC00)
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

September 24, 2009

HYBRID PLAN
FOR
SELF-IMPLEMENTING ON-SITE
CLEANUP AND DISPOSAL OF PCB
REMEDIATION WASTE
FROM THE
HVAC SYSTEM, BUILDING 5
FEDERAL BUREAU OF INVESTIGATION
QUANTICO COMPLEX
VIRGINIA

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1.0 INTRODUCTION

1.1 Background

The removal and replacement of ten air handling units (AHUs) associated with the heating, ventilation and air conditioning (HVAC) system has been planned as part of an ongoing Energy Conservation project at Building 5, FBI Academy, Quantico, Virginia. This Academy wide energy conservation contract has significant financial penalties associated with delays in the schedule. After commencement of this contract, specific components of the Building 5 HVAC system were determined to contain non-liquid polychlorinated biphenyls (NLPCBs). PCB-containing dust may also exist in the duct system as a result of degradation of certain HVAC components. The presence of PCBs in the HVAC system and the requirement to remediate has brought the energy conservation project to a standstill, with the possibility that the FBI will be responsible for up to $20,000,000 in penalties and other costs of delay.

An EHS consulting company, Applied Environmental, Inc. (AEI), was retained in August and September of 2007 to verify the presence of PCBs and their concentrations in components of a portion of the ten AHUs slated for removal. The results indicated that fiberglass liners and gaskets found in the AHUs were the sources of PCB contamination associated with AHUs and adjoining ductwork and ventilation system components.

The manner in which removal of the old units is conducted, as well as their transportation off the site and ultimate disposal, are described in this cleanup plan. Methods will comply with all applicable local state and federal regulations. Most specifically, these activities are intended to satisfy the requirements of EPA regulations regarding the management and disposition of PCBs (including 40 CFR 761) the Occupational Safety and Health Administration (OSHA) hazardous materials/waste requirements of 29 CFR 1910.120 & 29 CFR 1926.65. The removal and disposal of the HVAC system in Building 5 is one phase of a long-term effort to remediate PCBs that exist at the FBI Academy.

1.2 Site Description

The FBI Academy is located in a rural part of Stafford County, east of the Lunga Reservoir on the Quantico Marine Corps Base. Building 5 is the main classroom facility for training new agents at the FBI Academy. The location of Building 5, as well as the features of the surrounding area, is indicated on the Site Location Map included in Figure 1. Building 5 was constructed in the late 1960s, and consists of three occupied stories above the basement (ground) level.

The HVAC system for Building 5 is located in two mechanical rooms, identified as mechanical room east and mechanical room west, in the basement level of the building. Five AHUs are located in each of the two mechanical rooms (designated AHU 5-1 through AHU 5-10). Plenum spaces, identified as the east plenum and west plenum, are located directly adjacent to the mechanical rooms, respectively. The two plenums are separated by a passage, or tunnel, which bisects the building at the ground elevation. Other major components of the Building 5 HVAC system include two transformer room ventilation fans, designated F-5-18 and F-5-19, located in plenum east, and an extensive system of ductwork connecting the AHUs and supplying heated or cooled air to the building.

The layout of the two mechanical rooms and associated plenums, as well as the locations of the

AHUs and ventilation fans is shown in the Site Plan included in Figure 2. Building 5 was constructed in the late 1960's, and consists of three occupied stories above the basement level.

One of the AHUs in each of the mechanical rooms consists of a pretreated outside air (PTOA) unit (AHU-1 in mechanical room west, and AHU-2 in mechanical room east) that is ducted to the four other AHUs in each room, respectively. The PTOA units have a fresh air intake that is located in the wall of each mechanical room, drawing air from the plenums located adjacent to each room. Fresh air enters the plenums via vents to the passage, which bisects the building at ground level. The other eight AHUs (AHU-3 through AHU-10) are capable of simultaneously drawing air from intakes to the plenum, from the mechanical rooms through vents on the top of each AHU, and from air ducted from the PTOA units. The volume of air flow from each of the three sources into each AHU is regulated by automated louver systems. All of the AHUs are positioned on concrete pads which are approximately 6-inches thick.

The plenum spaces adjacent to each mechanical room are approximately eight feet wide, and extend the entire width of the building, as shown in Figure 2. They extend along each side of the passage, through which fresh air for the building is supplied. The ducts from the two PTOA units that supply treated air to the AHUs are located in the plenum spaces. Duct lining material consists of fiberglass panels, approximately one-inch in thickness, which is believed to exist throughout the duct system.

The ducting system associated with the AHUs is an extremely complex, interwoven network of custom-made sheet metal conduits. Each of the eight AHUs that supply Building 5 has a series of branching ducts leaving each unit. Each of these ducts undergoes transition (turning and converging of the duct), has a vibration dampening gasket (near its AHU), and makes a number of turns. The ducts leaving each AHU accomplish both even distribution of air as well as change in directionality. Means employed to reduce friction, maintain static pressure, and encourage laminar flow include the use of turning vanes and smooth tapered transitions. The ductwork system is carefully designed around the mechanical spaces to provide access and functionality. These ducts generally run a considerable distance (typically at least 30 feet) before exiting beyond the ceiling of the mechanical rooms. The ducts run vertically through chases in the concrete structure of the building to the three floors above the basement.

The ducts carry air to the various heating/cooling zones where air is discharged via supply air registers in the building. In general, the AHUs in the east and west mechanical rooms supply treated air to all three stories in the east and west half, respectively, of Building 5. Air from the building circulates back to the mechanical rooms via return air conduits located adjacent to the elevator shafts in each half of the building. The return air is then drawn into the intakes located on top of the AHUs and re-circulated throughout the building. Duct lining material consists of fiberglass panels, approximately one-inch in thickness, which is believed to exist throughout the duct system.

In addition, there are two supply air fan units (F-5-18 and F-5-19) located in the north end of the plenum adjacent to mechanical room east. The fans are ducted to the transformer room, located at the northeast corner of mechanical room east. Air exhausts from these rooms directly into the mechanical room via an opening in the wall near the ceiling. Fan F-5-19 is typically in operation; fan F-5-18 is believed to provide additional air flow, or act as a backup unit. There is also a small fan and intake to this duct system located in the mechanical room.

2.0 SITE CHARACTERIZATION

The following sections of this plan presents the findings of the PCB site characterization of the AHUs in the mechanical rooms at the site as required by 40 CFR 761.61(a)(2), 761.61(a)(3)(i)(A), and 761.61(a)(3)(i)(C). The site characterization activities were performed by AEI personnel during August 2007.

2.1 Nature of Contamination

Several components of the HVAC system contain PCBs as part of their manufacturing processes. PCBs are contained in the AHU gaskets, caulking, and ductwork insulation. The rubber vibration gaskets located in the supply ducts about three feet from each AHU also contain PCBs as part of their manufacturing process. However, PCB surface contamination is also present on glues, paint, mastics, ducts and fiberglass liners in the form of dust.

2.2 Location and Extent of Contamination

Waste that will be generated from this project includes both bulk product waste and bulk PCB remediation waste. The following air handling unit components have been determined to contain non-liquid PCBs:

- Resinously-bound fiberglass insulation (panels) installed in the interior of the air handling units
- Gaskets and seals

These materials are considered the sources of non-liquid PCBs in the HVAC system due to their PCB concentrations, which in some cases, exceed 10,000 ppm. The structural integrity of fiberglass panels in the air handling units has been eroded by the air stream to a point where dust size pieces of the panels have been distributed by air movement to other components of the HVAC system. The following materials have been determined to be contaminated with non-liquid PCBs (dust):

- Vibration dampeners between AHUs and ductwork
- Fiberglass duct liners
- Settled dust throughout Building 5

This determination is supported by a recognizable data trend: the PCB concentrations of building construction materials that trap and accumulate dust (i.e., vibration dampeners, fiberglass duct liners, carpeting) decrease as the distance air travels from the AHUs increases:

1. The vibration dampeners (145 - 4,100 ppm) are adjacent to the AHUs. Their PCB concentrations are an order of magnitude lower than the sources and an order of magnitude higher than materials downstream.

2. The fiberglass duct liners located immediately downstream of the vibration dampeners in the mechanical rooms have contamination concentrations between 1.9 and 4.5 ppm.

3. Carpeting on upper floors has less than 10 ppm.

Paint samples collected from the AHUs had concentrations ranging from 18 - 470 ppm PCB. The presence of PCBs in these samples is attributed to settled dust.

A total of 51 samples were collected including bulk samples of target materials from specific AHUs and the inside of the ducts, as well as wipe samples from registers within Building 5. Photographs of several sample locations, showing the unique sample identification number, are included in Appendix A. The layout of the mechanical rooms, along with the locations and numbers of the bulk samples and the duct lining material samples collected from within each of the mechanical rooms, are present on the attached Figure 2.

AEI's tasks included:

1. Verifying the presence of PCBs by collecting samples of select materials from approximately half the AHUs to be removed during planned renovation.

2. Determining if PCBs were present, in significant concentrations, within the ducts associated with the AHUs. Note: In all cases, to avoid prior contamination, surface samples were collected from the ducts of an AHU from which no prior bulk samples had been collected.

3. Determine if PCBs were present, in significant concentrations, at the supply registers serviced by the AHUs to be removed. Wipe samples were collected from ducts, just inside the register grills.

2.2.1 Sampling Methodology

Applied Environmental collected representative samples of the components from five of the ten AHUs previously identified or otherwise likely to contain PCBs. As the AHUs are identical and of the same age, components found to have elevated levels of PCBs in one or more AHUs would be suspect in all AHUs.

Four basic types of samples were collected:

1. Bulk samples of suspect material from specific AHUs,

2. Samples of duct insulation from ducts carrying supply side air from the specific AHUs,

3. Paint samples of the green and white paint that are on the specific AHUs, and

4. Wipe samples from inside the supplied air registers served by these AHUs.

Common sampling procedures apply to all the samples that were collected. These common protocols are:

- 4 ounce wide mouth glass jars were used for collection and shipment of samples and each sample was assigned a unique sample number.

- These sample numbers were marked with both pre-printed labels and handwritten in permanent marker at the sample location (for all samples except the wipe samples) as well as on each sample jar.

- The description of the material sampled and the date it was collected were similarly marked (except that labeling the site of the wipe samples was not feasible).

- Sample location, material sampled and date collected were also photo documented for all but the wipe samples.

- A single form was used to record sample information, request the appropriate laboratory analysis, manage sample possession, and transport.

- For each bulk sample, a brand new implement (knife, scraper, saw blade, etc.) were removed from its packaging, employed in the collection of a single sample and then subsequently disposed of following collection of that sample.

- A new pair of nitrile examination gloves were used in the collection of each individual sample.

The nature of the materials tested (interior of ducts and air handlers) precluded strict adherence to grid sampling protocols. The sampling protocols along with the assumption of homogeneity between air handling units is, however, sufficient to conclude that HVAC system components throughout the basement mechanical rooms contain regulated levels of PCBs.

AEI collected fifty-one (51) PCB samples, including blanks, consisting of:

- 9 vibration dampener/gasket samples
- 13 gasket/sealant samples from AHUs
- 7 fiberglass panel samples from AHUs
- 8 fiberglass duct liner samples
- 4 AHU paint samples
- 8 wipe samples from interior HVAC system surfaces outside of the mechanical rooms
- 2 field blanks (1- glove, 1-media)

2.2.2 Air Handling Units

Samples were collected from the PTOA unit and two additional AHUs in mechanical room east. In mechanical room west two AHUs, not including the PTOA unit, were selected for sampling. Other samples, including duct lining and inside register wipes, were collected from portions of the HVAC system serviced by AHUs which had not been subjected to bulk sampling. The materials collected from the AHUs included:

- Caulking
- Gasket Material

- Vibration Gasket
- Paint
- AHU Lining/Insulation
- Interior AHU Panel Lining (one AHU only)

Not all of these materials were collected from each of the AHUs as they did not appear to be present in/on each AHU.

Applied Environmental collected two white and two green paint samples (from separate AHUs) for analysis. These paint samples were considered critical, not only to evaluating the potential for PCBs in the paint, but also to determine the paint's potential PCB "contribution" added to materials (such as vibration gaskets) that it covered.

Samples were collected by cutting, gouging, prying or scraping a sufficient quantity of material to achieve sufficient mass to assure a valid analysis. In some cases the materials to be sampled had to be exposed by removing metal panels, separating flanges or joints or cutting these away.

2.2.3 Ducts

Duct Lining Material Samples

All duct sampling was performed within the mechanical rooms. AEI obtained samples of duct lining and submitted them for laboratory analyses to measure PCB concentrations. AEI sampled ducts from the four supply AHUs that were not bulk sampled. Single ducts were sampled in close proximity to the AHUs (just beyond the first vibration gasket). Samples were also collected, from different ducts, downstream of the AHUs but still within the confines of the same mechanical room.

Penetrations were made into each duct using a drill (to make corner holes) and a reciprocating saw to complete access. A new saw blade was used for each sample to prevent cross contamination. The saw cleanly cut through the duct material as well as the duct lining so the piece of freed metal and lining could be removed and the sample of duct lining simply lifted from the scrap of metal.

Wipe Samples

Of the ten targeted AHUs, eight directly supply air to Building 5. Though the AHUs were known to have PCB containing materials in their construction, it was not yet known if there were PCBs in the duct lining/insulation. Likewise it was not known if the AHUs or the ducts (if found to have PCB containing duct lining/insulation) might contribute PCB tainted dust or debris to the indoor environment of Building 5. It was concluded that wipe sampling in the supply ducts (just inside the registers) would logically provide access to a repository of HVAC carried dust and debris which could then be collected for analysis.

There had been no previous sampling of the supplied air registers. AEI's task was to locate those appropriate to sample, remove the register and obtain a wipe sample of the debris deposited in the duct just beyond the registers. This sampling was performed on ducts that had not been penetrated for purposes of duct lining/insulation sampling and serviced by building supply AHUs

which had not been subjected to bulk sampling. Once a target register was located, the register was removed and a hexane wetted sterile gauze pad was used to wipe the residue (effectively clean the surface) from a known area of duct surface. The register was then cleaned, readjusted, set back in place, and re-secured.

2.2.4 Laboratory Analyses

All wipe, bulk, and insulation samples were properly containerized and shipped under chain of custody to Martel Laboratories, Inc. of Baltimore, Maryland for PCB analyses by EPA SW-846 Method 3540/8082. The PCB analytical results, including a description of each sample collected, are summarized in the attached Table. The laboratory analytical reports and chain of custody forms are included in Appendix B, pursuant to 40 CFR 761.61.

2.2.5 Results

As shown in the attached Table 1, results of the sampling indicate that the five AHUs sampled contain materials that have concentrations of PCBs above 50 ppm. The duct lining/insulation has PCBs present, but at various concentrations less than 50 ppm. The wipe samples also yielded low, but detectable concentrations of PCBs. PCB Aroclor 1260 was the only Aroclor detected in any of the samples.

The AHUs have a number of materials which have elevated concentrations of PCBs, the highest of which include insulation/backing/glue [19,000 parts per million (ppm)] from inside the front panel of one AHU; and black rubber sealing mastic (14,000 ppm) from a panel collected from another AHU. In addition, PCB concentrations in the vibration gaskets ranged from 145 to 4,100 ppm. PCB levels detected in the primary insulation inside the AHUs ranged from 5.2 to 99 ppm. Samples of caulking and door sealing gaskets were also found to have elevated levels of PCBs. Concentrations of PCBs in the duct lining/insulation, whether near the AHU or down stream, ranged from non detectable to 45 ppm.

The concentrations of PCBs in the white/tan paint were found to be varied (18 and 470 ppm). The concentrations of PCBs in the green paint were also found to vary (83 and 180 ppm). Most of the materials collected (such as caulk, vibration gaskets, and black rubber gaskets) had some amount of paint on them; while door sealing gaskets, insulation inside the AHUs, and duct lining/insulation had little if any.

PCBs were detected in every wipe sample collected (except the blanks). These results ranged from a low of 0.57 to 6.61 ug/100 cm^2.

In summary, based on the results of the site characterization of the AHUs, the primary sources of PCB contamination include glue, mastics, gaskets, caulking and primary insulation in the AHUs. It is likely that the paint sample results showed levels of PCBs in the dust on the surface and not the paint itself. The AHU materials that tested positive for PCBs appear to be in solid form (non-liquid PCBs). There appears to be no liquid form of PCBs associated with these AHUs.

3.0 CLEANUP PLAN

The following sections of this plan present the proposed cleanup approach regarding the removal and disposal of the HVAC system components, as required by 40 CFR 761.61(a)(3)(i)(D).

3.1 Scope of Work

The scope of work includes removal of the majority of the HVAC system mechanical components. The ten AHUs in the two mechanical rooms, which include the two PTOA units, will be removed. This phase of the project will also remove up to 10 linear feet of ducting associated with each HVAC unit to facilitate the fit of the new units. However, the two transformer room ventilation fans located in the east plenum and the associated ducting to the transformer room will not be removed during his phase of the project, but will be in later phases.

To facilitate the timely commencement of the Energy Conservation contract in Building 5, the FBI proposes a phased PCB remediation, wherein the sources (HVAC units) of the PCB contamination are removed immediately and the contaminated ductwork removed during planned renovations of Building 5 over the next 5 years (see section 4.1). Then, as a temporary interim remedial measure, the interior of all supply side ducting, from the HVAC units to the floor discharges, will be sprayed with DP 2510B/2515W Duct Liner Protective Coating to form a continuous membrane that will stabilize and encapsulate the interior insulation material. Until final removal of the ducts, this encapsulation will be inspected semi-annual to assure that the coating is intact and annual wipe sampling to confirm that no PCBs have migrated through the membrane. There are approximately 5600 linear feet of ducting in building 5 that will need to be monitored. To assure that representative samples of the encapsulation ducts are tested, an algorithm from ANSI/ASQC Z1.9, "Sampling Procedures and Tables for Inspection by Variables" was used to calculate that 15 randomly selected sample locations need to be tested for each inspection cycle. The Algorithm takes into account the total number feet of duct, the inspection frequency and the Acceptable Quality Level (AQL). Once four (4) successful semi-annual cycles of testing have been completed, and the sampling results are found to be below cleanup levels, the test/inspection cycle will be completed annual thereafter.

The plenums will be thoroughly cleaned. For disposal purposes, it is assumed that all materials removed (i.e., AHUs, PTOA units, ventilation fans, etc.) contain PCB concentrations in excess of 50 ppm. All PCB waste will be disposed of in a TSCA landfill.

3.2 Cleaning of the East and West Exterior Intake Plenums

The HVAC units in Building 5 receive intake fresh air from two (2) sources, one from the Pre-Treated Outside Air (PTOA) units and the other from direct outside air. The PTOA receives 100% outside air, tempers it with passage over either heated or cooled coils and ducts it directly to the HVAC units (through the exterior plenum space). The exterior intake plenum is upstream from the PCB HVAC source and has not been contaminated with PCBs. However, the paint and the duct lining in the plenums, which are upstream from the HVAC unit, are additional potential sources of PCB's. PCB-containing duct liner in the PTOA ducts will be encapsulated as described in Section 3.1.

Physical conditions in the exterior plenum had deteriorated, with the presence of stored materials, dirt, debris, and peeling paint on PTOA duct exteriors.

A recent storm water flooding event in the passageway between the Building 5 exterior plenums caused a mud/silt accumulation in these plenums and required an emergency cleaning and remediation. As part of the flood cleanup, the entire area was power-washed to remove mud/silt accumulations.

During future remediation, exterior painted surfaces will be tested prior to disposal. All waste derived from future remedial activities in the plenum passages (with a PCB concentration of 50 ppm or greater) will be sent to a TSCA landfill for disposal. Bulk PCB remediation wastes with a PCB concentration of <50 ppm shall be disposed of in accordance with 761.61 (a)(5)(v)(A).

3.3 Pilot Cleaning Project & Remediation of Building Air Supply Duct Interiors and Return Chases

Pilot Confirmation Project

In an initial attempt to find an alternative to complete removal of the duct system, the FBI arranged for TRC Environmental Corporation (TRC) to conduct a pilot test to determine if the fiberglass lined ducts at the FBI Academy's Main Instructional Building (Building No. 5) could be cleaned without damaging the lining. The confirmation test also evaluated the potential to achieve an unrestricted clean-up level for total polychlorinated biphenyls (PCBs) of 1 microgram per 100 square centimeters (1 ug/100 cm^2) or less on interior lined duct surfaces in a representative section of the building ventilation duct system. TRC conducted pre- and post-cleaning diagnostic testing to evaluate pilot test cleaning performance. TRC personnel collected up to 10 wipe samples from the pilot test duct, consisting of a hexane wipe of a 10 centimeter by 10 centimeter (10 cm x 10 cm) area before duct cleaning commenced. Wipe sampling was repeated after cleaning prior to encapsulating from 10 separate sampling locations. In addition, following cleaning, three (3) bulk material samples were collected from sections of the lining outer layer surface. The purpose of the bulk lining samples was to determine if the lining had adsorbed PCBs from the dust that had accumulated on the lining surface. All analyses were performed for PCB Aroclors (EPA SW-846 Method 8082). After the cleaning procedure, the duct interiors were sprayed with a latex/polymer coating to facilitate future cleaning and prevent further deterioration of the fiberglass liner material. This coating was subsequently sampled for PCBs and found to be below detectable levels.

Pilot Test Results

The Pilot Test Project did result in a reduction in the surface PCB dust contamination on the interior duct liner, but was unable to achieve clearance levels. The testing also confirmed that the duct liners were not merely contaminated, but were in fact PCB containing materials. The full report of the Pilot Test Demonstration project has been previously provided to the EPA. These results confirmed that the duct system will have to be removed and replaced during subsequent renovations of Building 5.

3.4 Contaminated HVAC Equipment Removal Procedures

3.4.1 General Procedures

1. Removal of specific AHUs, PTOA units, ventilation fans, and ducting will be performed in a safe, regulatory compliant and expeditious manner.

2. Removal will be performed in a manner that minimizes the release of contaminants (primarily PCBs) and prevents contamination of the mechanical rooms.

3. Before demolition activities will begin, all PCB-containing equipment and materials will be declared prior to being disturbed. All identified PCB-containing items will be properly labeled with approved PCB labels in accordance with 40 CFR Part 761.45. Items containing PCBs cannot be reused or recycled as TSCA does not have provisions for using, reusing, or recycling items or materials containing PCBs. In Building 5 it is assumed that the ten AHUs, including the two PTOA units and the connecting large ducts, and the two transformer room ventilation fans in the east plenum and associated ducting, contain PCB materials. These components either consist of materials that are known to contain PCBs or are highly suspected of containing PCBs based on their construction and appearance.

4. Dismantlement will be conducted in a manner that isolates the work environment (i.e., temporary containment with outside ducted and filtered negative air).

5. Dismantled AHUs, ducts, and fans, or portions of these units, will be containerized, as well as project related waste material, including but not limited to, expendable project materials, Personal Protective Equipment (PPE), containment structure, and vacuum/wipe/filter debris. Containers will be approved and appropriate shipping containers and will be sealed.

6. Following removal of AHUs, PTOA units, and fans, the floor/pad surface beneath the unit will be cleaned/remediated, leaving behind a work area with PCBs levels below cleanup levels.

7. If AHUs, duct sections, and fans are to be moved out as complete or partial sections, they will be completely enclosed in a manner that will maintain an effective air-tight seal when they are removed from their location in the mechanical rooms or plenums, taken outside, and loaded into approved shipping containers for transportation. At no time will the AHUs, ducts, or fans, or portions of these units, be without an air-tight seal or approved transportation container from the time they are first moved, until the time they are ready for over-the-road shipment to their recycling or disposal destination.

8. The contractor is to carry out all work via the exterior doors of the mechanical rooms and plenums. The exterior doors, through which all equipment, contractor personnel, and material may enter and through which the units and ducting are to be removed, lay opposite each other across the two-lane ground level access passage. There are two sets of oversized side-by-side swinging doors between the mechanical rooms and the access passage. Access and egress from the passage to and from the mechanical rooms will require negotiating the one foot rise from the passage to the door lip, which is then level with the mechanical room floor. Disposal facility has size limitations for accepted material therefore dismatling all AHU's will be required.

9. Containers, AHUs, ducts, and fans, or portions of components will only be moved with equipment and in a manner that is safe, effective, and compliant with environmental, as well as occupational regulations.

10. All project related materials including the AHUs, ducts, and fans, or any portion of these units including portions of ducts, when prepared for shipment for final disposal, will be placed in properly sealed approved shipping containers. AHUs, ducts, and fans, or any portions of these units will be secured in sealed DOT-approved shipping containers such as roll off boxes.

11. Containers (within which are the AHUs, ducts, or fans, or portions of these units, and projected generated waste) will be transported to a disposal facility in a safe and compliant manner.

12. All containerized materials will be disposed of in an appropriate and compliant manner.

13. The Contractor will isolate the PCB control area by physical boundaries to prevent unauthorized entry of personnel. Food, drink and smoking materials will not be permitted in areas where PCBs are handled or PCB items are stored.

14. Hazardous Materials control, including housekeeping and cleanup procedures, are essential components of this work. To prevent further dispersion and contamination, the Contractor will maintain all surfaces within the work area free of accumulations of debris, restrict the spread of debris and keep waste from being distributed over the general area or to other areas in the building, post appropriate hazard warning signs, and provide appropriate personal protective clothing for all personnel engaged in cleaning up scrap metal and waste. PCBs will be handled such that no skin contact occurs.

15. Work area egress and access: the contractor will establish and maintain emergency and fire exits from the work area. In addition to contractor's employees, the following personnel will be granted access to the areas:

    a. FBI Contracting Officer or Designated Representative.
    b. FBI Safety and Environmental Management Personnel or Designated Representatives.
    c. FBI Authorized Inspection Personnel (i.e. third party oversight).
    d. Emergency Responders.

    Unless responding to an emergency, these personnel will be expected to respect and utilize the protective equipment and protocols implemented by remediation contract personnel. These personnel are to take full advantage of these protective measures in order to protect themselves and others, as well as maintaining the integrity of ongoing operations, while safeguarding the environment.

16. Any decontamination rinsate or other debris from floor cleaning, will be collected and stored in appropriately sealed, well-marked containers. These containers will be temporarily stored at a controlled location under the stewardship of the Contractor. The Contractor will collect representative samples from each container and submit them to a laboratory for PCB analysis. Upon receipt of laboratory results, the Contractor will

determine and execute final disposition of the contents for each container per 40 CFR 761.61 (a)(5).

17. PPE generated during remediation activities may potentially become contaminated. PPE will be collected, moved, and stored in the same manner as the remediated material. PPE will be collected, handled, and stored in containers separate from the remediated materials, and disposed of per all applicable regulations.

18. The contractor will select the proper PCB removal procedures to minimize contamination of work areas with PCB or other PCB-containing debris/waste.

19. Hazardous materials generated in the course of this project will not be dumped into storm drains, sewage lines, or dumpsters, nor will they be introduced into the environment. The Contractor will follow all federal and state regulations regarding proper handling and disposal of hazardous materials.

20. Temporary storage of waste materials (AHUs, ducts, fans, portions of these units, and project generated waste) will only occur for these materials when placed in their sealed shipping containers for a period of up to 30 days maximum. Additionally these containers in storage will be protected from the weather and marked in a manner that clearly communicates warnings related to PCBs, lead and the significant health hazards of each.

21. Continued access to and operation of the mechanical rooms by facilities personnel will be maintained throughout the period of work. This includes maintaining emergency exits and building emergency equipment, such as fire alarms, fire hose equipment, and emergency lighting devices, in operating order.

3.4.2 AHU and Fan Dismantlement

The disposal facility has size limitations for accepted material therefore dismantling all AHU's will be required. The Contractor will take the following steps for dismantling the AHUs:

1. Power Down and complete permanent electrical isolation of the AHU(s), or fans to be dismantled or removed.

2. Power Down any units that may supply air to the AHU(s), to be dismantled or removed. Carry out effective lock-out of these supply units.

3. Close all fresh air supply vents going to the AHU, or AHUs to be dismantled or removed. Accomplish this using a wood or steel closure secured to the exterior of fresh air supply openings, and use caulk and/or other material to achieve an air-tight, weatherproof seal.

4. When sections of ducting are cleaned apply an encapsulant such DP 2510B/2515W Duct Liner Protective Coating (see Appendix C for manufacturer's specifications) immediately to all available internal surfaces. In particular, potentially friable fiberglass and/or other insulation materials will be effectively encapsulated in equipment components as they are removed.

5. Using a Glove Bag, other mini enclosure, or full scale containment, blank (wood or steel) and air-tight seal all of the supply inlets. Likewise seal the opposing opening at the AHU or fan. For all ducting to remain in place, use an encapsulant such as DP 2510B/2515W Duct Liner Protective Coating (see Appendix C for manufacturer's specifications) to seal the insulation in order to prevent the insulation from becoming friable. Install a "clean bolt flange" at the terminus of each remaining duct for later attachment of any new ducting and AHUs.

6. Similarly (with Glove Bag or other mini enclosure), blank (wood or steel) and air tight seal all of the ducts leaving the AHU or fan. Seal the opposing opening at the AHU or fan. For any inaccessible ducting to remain in place, use an encapsulant such as DP 2510B/2515W Duct Liner Protective Coating (see Appendix C for manufacturer's specifications)to seal the insulation in the duct that remains in order to prevent the insulation from becoming friable. Install a "clean bolt flange" at the terminus of each remaining duct for later attachment of the new AHUs.

7. Alternatively, a large containment (to be used for overall dismantlement) may be constructed to include a portion (one foot or more) of supply duct and duct leaving each unit. The Contractor will effectively blank the remaining duct. For any ducting to remain in place, use an encapsulant such as DP 2510B/2515W Duct Liner Protective Coating (see Appendix C for manufacturer's specifications) to seal the insulation in the duct that remains in order to prevent the insulation from becoming friable. Install a "clean bolt flange" at the terminus of each remaining duct for later attachment of the new AHUs.

8. Glove Bags, mini enclosure, or full scale containments will be maintained under negative pressure throughout the period that any dismantlement is to occur.

9. Dismantlement of AHUs, fans and any portion thereof will be carried out using unbolting or cold cutting. Cold cutting equipment (such as cut-off or reciprocating saws) will be operated in a manner where the metal and other materials encountered by the blade are not heated to a temperature that may result in the volatilization of PCBs, lead, or other chemical agents. At no time will a cold cutting tool produce any visible smoke.

10. Upon completion of dismantlement and load out of all debris, the floor/pad will be cleaned/remediated in a manner that removes visible liquid staining (if present) and any loose paint, concrete, or other floor/pad components. All debris from this procedure will be collected and handled in the same manner as other project waste. This will be accomplished prior to removal of the containment.

11. The interior of the containment will be cleaned using High Efficiency Particulate Air (HEPA) vacuum and wiping, or alternatively coated with encapsulant prior to dismantlement or disposal.

3.5 Schedule

The work will be performed in accordance with the following schedule:

Table I – Basement Mechanical Rooms - Remediation Schedule		
Work Area (Phase I)	**Estimated Start in Days After EPA Approval/ NORESCO Contract Award**	**Estimated Days to Complete**
AHU 5-1*	60 Days	120 days
AHU 5-3*	60 Days	120 days
AHU 5-4*	60 Days	120 days
AHU 5-5*	60 Days	120 days
AHU 5-6*	60 Days	120 days

Table II – Basement Mechanical Rooms - Remediation Schedule		
Work Area (Phase II)	**Estimated Start in Days After EPA Approval/NORESCO Contract Award**	**Estimated Days to Complete**
AHU 5-2*	70 Days	120 days
AHU 5-7*	70 Days	120 days
AHU 5-8*	70 Days	120 days
AHU 5-9*	70 Days	120 days
AHU 5-10*	70 Days	120 days
Supply Air Fan F-5-18 & Ductwork	March 2010	30 days
Supply Air Fan F-5-19 & Ductwork	March 2010	30 days

** Up to 10 linear feet of ductwork may be removed with each AHU to facilitate fit of the new equipment.*

EPA will be provided a revised copy of the schedule in the event of any significant changes.

3.6 Work Area Preparation

Removal of the HVAC system components will take place within negative pressure enclosures constructed of two alternating layers of 6 mil polyethylene sheeting that isolates the work area from the ceiling to the floor and prevents any potential PCB containing dust from entering adjacent areas. All seams will be taped to make the containment air tight. A standard three stage decontamination chamber consisting of an equipment room, changing room and clean room will be constructed to allow worker entry and egress into the work area. A single two chambered

waste load out will be included to facilitate removal of those objects which are too heavy or bulky to remove safely through the three chambered decontamination unit. All work area containments will be posted with PCB warning labels and other required warnings.

HEPA air filtration units sufficient to maintain a continuous negative pressure differential of -0.02 in/H_2O at all times during the demolition of the AHUs will be installed in the wall of the containment and vented to a location outside the work area. Additional negative air filtration machines will be provided as necessary to ensure that adequate negative pressure is achieved and maintained during the course of AHU removal. These machines will remain operational during the entire period that the removal occurs and be vented outdoors. A strip chart recording manometer will also be used to document that continuous negative pressure is maintained during the removal. Air filtration units will be regularly checked and maintained to prevent excessive loading and loss of negative pressure. Any loss of negative pressure will require a stoppage of work until adequate negative pressure has been restored. After completion of each AHU dismantlement and removal of all debris, all concrete surfaces and the wall sections of the containment will be HEPA vacuumed and washed to remove any dirt, stains and dust. Any loose polyethylene used to protect room surfaces inside the containment will be sprayed with a dust encapsulant and double bagged for transport to roll-off. All remaining tool and equipment will be decontaminated and removed from enclosure. The wall sections of the enclosure will be taken apart and reassembled around the next AHU.

Decontamination standards and procedures will be followed in accordance with 40 CFR 761.79 prior to dismantlement of the contaminated area. Upon successful completion of remediation activities in each mechanical room, all surfaces of the containment will be sprayed with a dust encapsulant and allowed to dry thoroughly before disassembling the containment and disposing of the polyethylene.

3.7 Personal Protective Equipment

Personal protective equipment used during the HVAC system removal will be for the purpose of protecting workers from dermal contact and inhalation of solid phase particulate matter containing PCBs. There is no liquid or vapor phase PCB present at the site and these forms are not anticipated to be generated during removal of the AHUs.

Workers will utilize Level C protection consisting of a disposable hooded Tyvek coverall, disposable booties, goggles, neoprene or rubber gloves, and a powered air purifying respirator (PAPR) or full face air purifying respirator (APR) equipped with combination type HEPA(P-100)/Organic Vapor cartridges during HVAC system removal activities. Workers will also utilize steel toed boots, hardhats, and use ear plugs or hearing protectors during removal activities that generate high noise levels.

Used disposable PPE will be removed and containerized in the decontamination unit. All items for reuse and exteriors of all sealed waste containers leaving the work area will be decontaminated in accordance with 40 CFR Part 761.79.

3.8 Decontamination

This section describes how personnel and equipment are decontaminated when they leave the

containment work area. Decontamination procedures are designed to achieve an orderly, controlled removal or neutralization of contaminants that may accumulate on personnel or equipment. These procedures minimize worker contact with contaminants and protect against the transfer of contaminants outside designated work zones. They also extend the useful life of PPE by reducing the amount of time that contaminants contact and permeate PPE surfaces. Decontamination procedures will be performed in accordance with 40 CFR Part 761.79.

Personnel Decontamination

Personnel exiting the decontamination area will utilize the following decontamination procedure listed below. Appropriate use of PPE during the removal process (i.e., hooded Tyvek, APRs, PAPRs, and rubber gloves) and following the decontamination procedures described below will prevent employee dermal and inhalation exposure to solid phase particulate matter containing PCBs.

Decontamination Procedure

1. Proceed to equipment drop point (Station 1) and place equipment on plastic covered table or within plastic-lined drum.

2. Move to decontamination area entrance and HEPA vacuum excess dust from coveralls and PPE before exiting. Used disposable PPE will be removed and containerized in the decontamination unit (Station 2).

3. Use airless sprayer containing clean tap water to mist outer surface of coverall before removal to minimize generation of airborne dust.

4. Step onto pad inside first room of three chambered decon area (Station 3) and remove disposable PPE (e.g., booties, coveralls, gloves) and place into plastic-lined drum (Station 4).

5. Remove respirator (Station 5).

6. Perform final wash-up of face and hands to remove and remaining dust.

Equipment Decontamination

Portable equipment utilized during the HVAC system removal activities such as hand tools, power tools, HEPA vacuums, negative air filtration units, etc. will be decontaminated prior to removal from the work area by wet wiping with rags using a solvent per 40 CFR Part 761.79(c). Rags and paper towels generated as part of this process will be containerized for proper disposal.

3.9 Demolition Removal

The AHUs, any ducts or sections of ducts removed, and fans will be placed directly into roll off dumpsters for offsite disposal. While close proximity to the work area is generally preferred, the safest and most practical location for roll-offs will be in the paved area on side of the building, at top of hill, near the start of gravel access road to the tunnel area. The height of the tunnel is insufficient for truck to drop or pick up the roll-offs and there is no ground area near the tunnel entrance that would allow level

placement of roll-offs. There is road access to only one end of the tunnel and it is steep, gravel surface and has a tight curve just out side of the tunnel. An extendable boom construction fork lift will transport material to the roll-off. Placing polyethylene up this road would be impractical. It would be torn up on nearly every trip and would be an unsafe condition for the forklift transiting up the steep incline Procedure to insure no spread of contaminant is as follows.

1. Smaller debris and material will be placed into lined transport boxes on pallets and sealed
2. Larger flat panels will be placed on pallets, strapped down, doubled wrapped in plastic and all seams sealed.
3. All pallets will be removed from the containment through decon. Decon floor will be covered with industrial rug material so as to not track any dust out of containment.
4. All pallets, containers and moving equipment will be HEPA vacuumed and wet wiped before leaving decon.
5. Pallets will be moved from containment to doorway manually utilizing floor jacks to minimize chance of accidents.
6. Pallets will be picked up at doorway from tunnel by forklift and transported up the hill to roll-off. Utilizing extendable boom construction forklift allows for navigation of the access road and placement of the pallets up into the roll-off gently without damaging the protective wrappings.

Dust control equipment (HEPA vacuums) will be used during the removal activities at all times.

4.0 CLEANUP LEVELS

This scope of work will address three cleanup levels to be considered during remedial activities. The first being the actual removal and disposal of bulk PCB waste mechanical equipment identified as the HVAC system. The cleanup level for this is action is 0 ppm as they will be removed during remedial activities.

The second cleanup level will address the temporary interim remedial measure to encapsulate the interior of all supply side ducting, from the HVAC units to the floor discharges. The interior of the ducting lining is considered to be an area of "High Occupancy" since it forces air into spaces of high occupancy. Therefore, once encapsulated by using DP 2510 B/2515W Duct Liner Protective Coating the appropriate cleanup level is 2 $\mu g/100cm^2$. The encapsulation of the ducting is a short-term action until the compliance agreement addresses the full characterization and elimination of PCB's from the entire academy.

The third cleanup level addresses the concrete flooring beneath the HVAC units. This area is considered low occupancy since the location is considered non-office space and occupancy is transitory. The concrete floor beneath the AHUs in the mechanical rooms and ventilation fans in the east plenum will require additional sampling to ensure any residual PCB contamination is identified and remediated. The concrete pads beneath the AHUs and fans must be below the appropriate cleanup level of 5 $\mu g/100cm^2$ for PCBs prior to installation of the new units. Sampling of the concrete floor will be performed, using a Hybrid approach in conformance with both 40 CFR Part 761.61 (a) and (c). An alternative sampling approach to the protocols required by 40 CFR Part 761.61 (a) is considered to be appropriate for this project. A risk-based disposal approval is required, under 40 CFR Part 761.61 (c), whenever alternative methods are proposed

based on site-specific conditions. It is currently not known if the platforms beneath the AHUs are painted, sealed, or bare; the concrete slabs beneath the AHUs are painted black surrounding each unit. There is no liquid PCB contamination known to exist in the AHUs, based on the site characterization. If paint exists beneath the AHU's it will remain in place.

4.1 Remainder of Building 5 Ductwork and Other Materials Contaminated with PCBs

Remediation of PCBs on the upper floors of the building will require the FBI to conduct significant renovations to the facility. The FBI anticipates replacing most of the ceiling architectural finishes in the building since they will likely need to be demolished to complete the remediation work.

Building 5 serves a unique role at the FBI Academy. It houses numerous large classrooms and training rooms for the entire academy. There are currently no alternative training or other suitable facilities at the Academy that can accommodate the large classes that use Building 5. The continued use of the facility is critical to the mission of the FBI Academy.

The FBI also understands the importance of addressing the PCB regulatory requirements pertaining to not just Building 5 but the entire FBI Academy. The FBI is proposing to remove the remaining PCB contamination as part of a multi-phased 15-year Academy-wide renovation program, which requires certain buildings to remain in-service while the PCBs are systematically removed and other buildings to undergo a complete renovation.

Building 5 is the primary classroom training facility for new agents at the FBI Academy and performs a critical function that cannot be disrupted or easily relocated. In the absence of an Academy-wide compliance agreement with the EPA, the FBI is proposing, subject to the availability to appropriated funds and the availability of alternative training space, that the removal of the HVAC ducts and complete remediation of Building 5 be completed by the end of FY 2015.

4.2 Compliance Agreement

The FBI Academy is working to establish an Academy-wide compliance agreement with the EPA to address similar buildings throughout the Quantico Complex. The compliance agreement will address the characterization and elimination of PCB's from the entire FBI academy. The FBI Academy has requested funding for FY2009 to prepare a Compliance Agreement and a Health Hazard Evaluation. It is anticipated that the FBI will be able to provide adequate data that demonstrates to the EPA that much, if not all of the materials in Building 5 discussed herein do not pose an unreasonable risk of injury to health or the environment while the compliance agreement is implemented. Upon establishment of a Compliance Agreement the building renovation schedule contained in section 4.1 will be revised accordingly.

5.0 WASTE DISPOSAL

The PCB waste disposal procedures to be implemented at the site are described below pursuant to 40 CFR 761.61(a)(5).

All debris generated during the removal of the HVAC system will be considered to be PCB-containing for disposal purposes (greater than 50 ppm of PCBs). These materials will include all components of the AHUs and ventilation fans, sheet metal from any removed ducting, vibration gaskets, caulking, paint waste, etc. No PCB liquid wastes are expected to be generated during the AHU removal actions. In the event that PCB containing materials are encountered in greater volumes than originally anticipated, or other materials that contain PCBs are encountered, or that PCBs are discovered in unanticipated phases (i.e., liquid), the EPA will be notified in writing of any amendments necessary to the cleanup approach.

The waste HVAC system materials and equipment, in either intact or partially dismantled condition, will be placed directly into DOT-approved 40-cubic yard roll-off dumpsters and covered. Waste generated on site will be removed within 30 days of generation and transported to the TSCA landfill facility. The PCB items will be shipped by a licensed hazardous waste transporter to an approved treatment, storage, and disposal facility under proper manifesting. The HVAC system and all remediation wastes generated as a result of remediation activities is all assumed to contain greater than 50 ppm of PCBs and will ultimately be disposed of offsite at a hazardous waste landfill or a PCB disposal facility as required by 40 CFR 761.61(a)(5)(B)(2)(i) and (iii). Bulk PCB wastes removed from the AHUs will be disposed of at an approved TSCA landfill facility. The exact facility to be used will be determined prior to commencement of the HVAC system removal project. EPA will be notified of the disposal location before remedial activities commence.

6.0 POST CLEANUP VERIFICATION SAMPLING

6.1 HVAC System Verification Sampling

Upon completion of removal and fine cleaning activities, the FBI's designee shall conduct a visual inspection of the work area for visible dust and debris. Work areas shall be free of visible dust and debris prior to conducting post cleanup verification sampling. Verification sampling will be conducted to determine the area has been adequately cleaned.

The FBI is proposing to use a modified wipe sampling method for the cleanup verification sampling method because the underlying concrete is impervious to non-liquid PCB dust. The FBI proposes the following:

1) A minimum of three standard wipe samples per work area will be collected using a 1.5 meter grid in accordance with 40 CFR 761.283. The sample collection locations shall be determined in accordance with 40 CFR 761.283.

2) Samples will be collected from a 100 square centimeter area (10 cm by 10 cm) using methanol-soaked gauze pads.

3) Sample results will be reported in micrograms per 100 square centimeters.

4) The cleaning efforts shall be considered complete when all work area sample results are 5 microgram (PCBs) per 100 square centimeters (5 $\mu g/100cm^2$) or less.

5) If any of the samples exceed 5 $\mu g/100cm^2$, the work area shall be re-cleaned and re-sampled until the cleanliness levels are achieved.

6.2 Operations and Maintenance Plan

As part of the Compliance Agreement an Operations and Maintenance (O&M) Plan will be developed to lay out a long-term routine schedule for collection of air and wipe samples to ensure that HVAC PCB sources have been removed and duct interior sources stabilized. O&M will be conducted as follows until the compliance agreement, which is under development, is in place. Sampling will be used to confirm that PCBs are not being distributed throughout the new AHUs or the stabilized duct system. The FBI will conduct semi-annual visual inspections of 15 randomly selected sample location needed to be tested for each inspection cycle to confirm that no physical deterioration has occurred. In addition, semi-annual PCB wipe samples will be conducted of duct interior locations to assure that PCBs have not leached or otherwise broken through the encapsulant. If sample results exceed cleanup levels, the work area will be re-cleaned and re-sampled. If the second sample attempt also exceeds cleanup levels or show signs of physical deterioration, EPA will be notified immediately and the failed duct lining will be re encapsulated using DP 2510B/2515W Duct Liner Protective Coating. The re-encapsulated work area shall be re-cleaned and re-sampled until the appropriate cleanup level of 2 $\mu g/100cm^2$ is achieved.

7.0 DOCUMENTATION

A summary report documenting the cleanup activities, along with copies of hazardous waste manifests and certificates of disposal, will be prepared and submitted to the Regional Administrator and PCB Compliance Officer, EPA Region III, within ninety (90) days of completion of cleanup activities.

8.0 CLEANUP CONTRACTOR'S CERTIFICATION STATEMENT

The cleanup contractor's certification statement is included in Appendix D pursuant to 40 CFR 761.61(a)(3)(i)(E).

9.0 PROPERTY OWNER'S CERTIFICATION STATEMENT

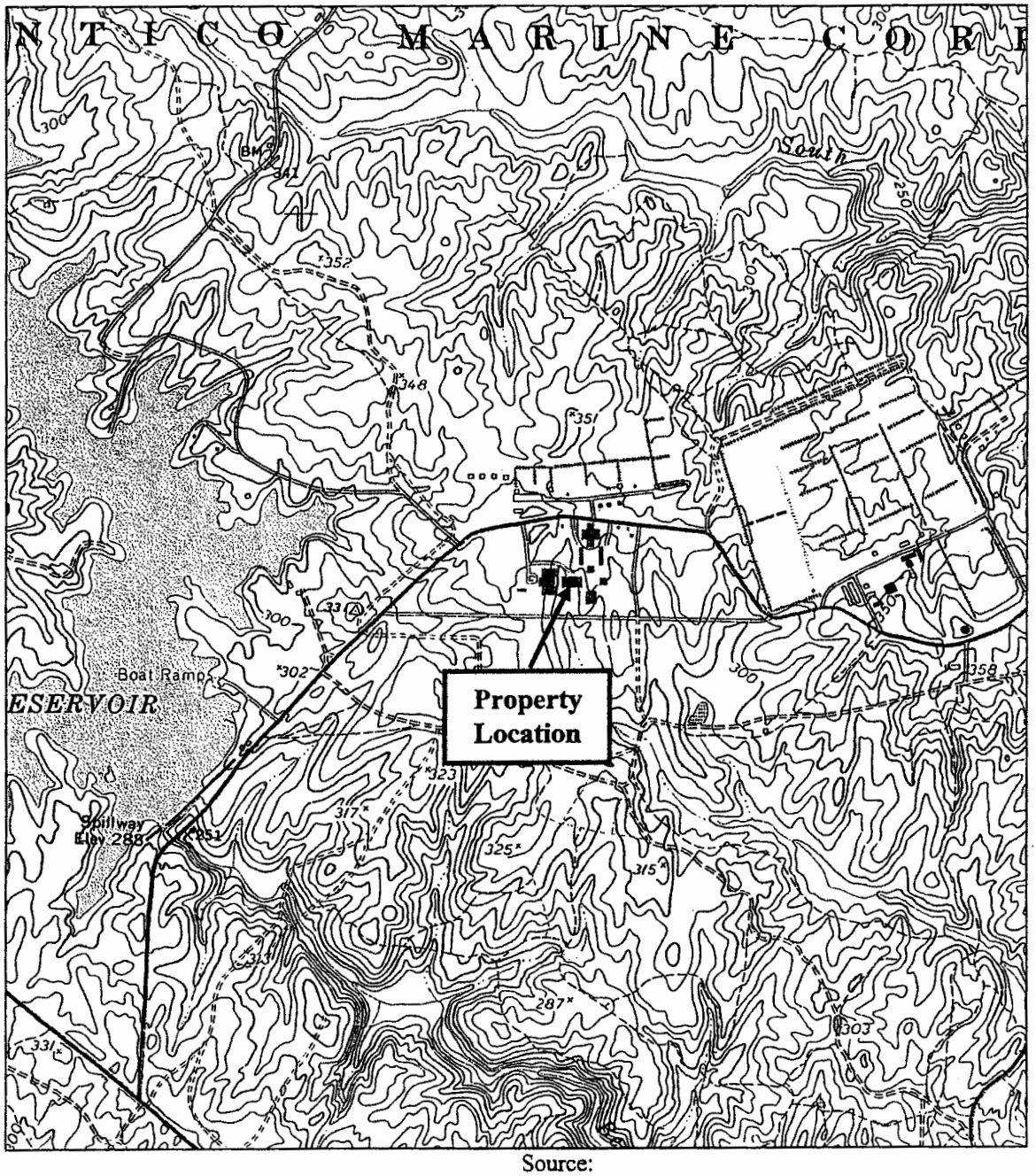
The property owner's certification statement is included in Appendix E pursuant to 40 CFR 761.61(a)(3)(i)(E).

FIGURES

Figure 1

Site Location Map

Work Plan
Federal Bureau of Investigation Academy
Quantico, Virginia



Source:
U.S. Geological Survey, 7.5 Minute Series,
Joplin, Virginia. Photoinspected 1981.
Scale: 1: 24000

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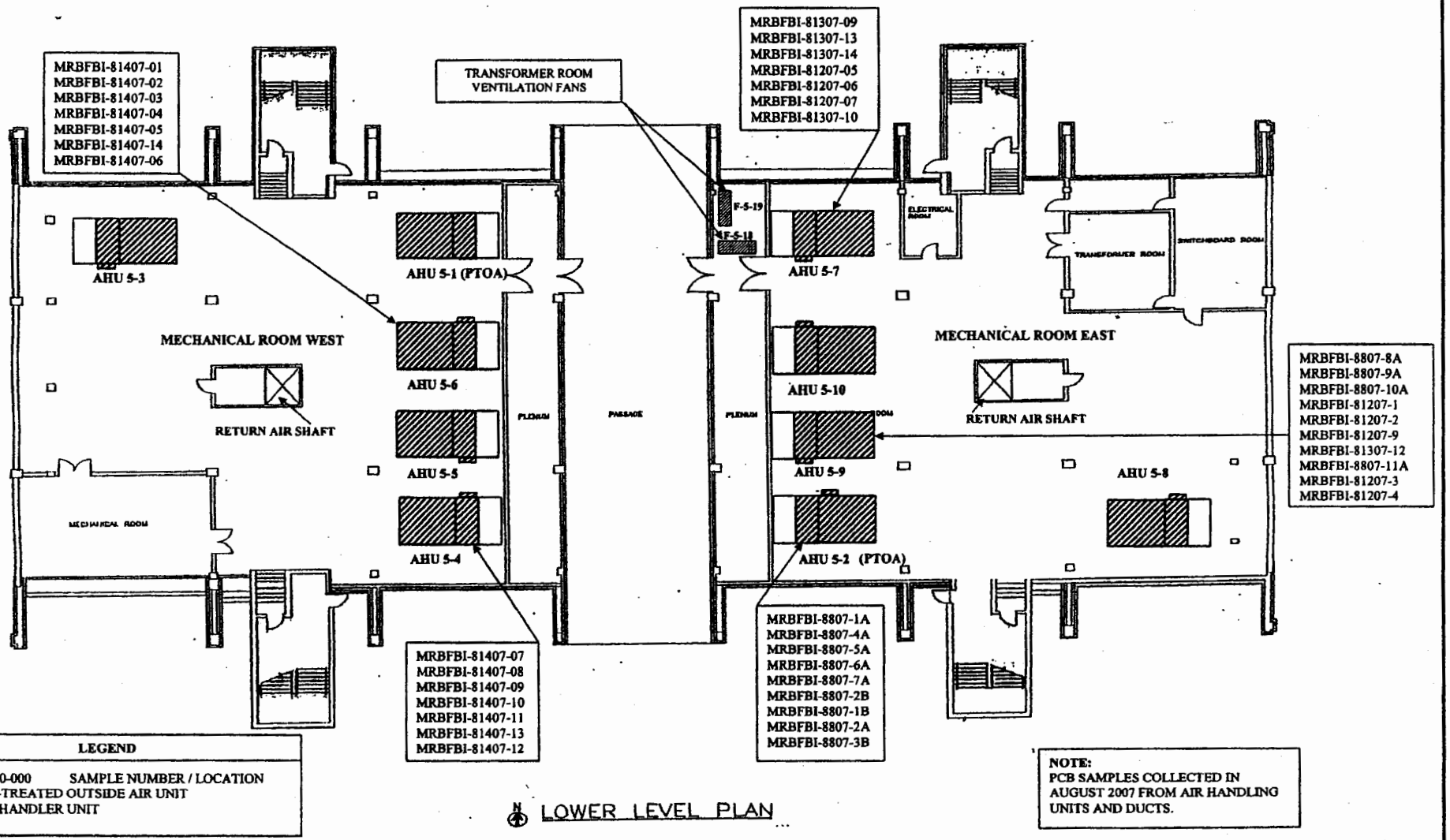

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FIGURE 2
SITE PLAN/SAMPLE LOCATION PLAN

PROJECT: BUILDING 5, FBI ACADEMY, QUANTICO, VIRGINIA

JOB NO.: 1935-08-0008	DATE: 5/23/2008	DRAWN BY: OAS

TABLES

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WIPE SAMPLE RESULTS
FBI Academy
Building 5
Quantico, Virginia

SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (ug/wipe)	CONCENTRATION (ug/100cm2)
MRBFBI-81307-01		8/13/2007	EPA 8082	PCB-1016	ND	
				PCB-1221	ND	
				PCB-1232	ND	
	3rd Floor- Zone 11 Base of Grill Rectangular AHU-5-10			PCB-1242	ND	
	Total Area Wiped = 710 cm²			PCB-1248	ND	
				PCB-1254	ND	
				PCB-1260	**16**	**2.25**
				PCB-1262	ND	
MRBFBI-81307-02		8/13/2007	EPA 8082	PCB-1016	ND	
				PCB-1221	ND	
				PCB-1232	ND	
	3rd Floor- Zone 4 Base of Rectangular Grill AHU-5-10			PCB-1242	ND	
	Total Area Wiped = 348 cm²			PCB-1248	ND	
				PCB-1254	ND	
				PCB-1260	**23**	**6.61**
				PCB-1262	ND	
MRBFBI-81307-03		8/13/2007	EPA 8082	PCB-1016	ND	
				PCB-1221	ND	
				PCB-1232	ND	
	2nd Floor- Probable Zone 6 Turning Vanes AHU-5-5			PCB-1242	ND	
	Total Area Wiped = 368 cm²			PCB-1248	ND	
				PCB-1254	ND	
				PCB-1260	**10**	**2.7**
				PCB-1262	ND	
MRBFBI-81307-04		8/13/2007	EPA 8082	PCB-1016	ND	
				PCB-1221	ND	
				PCB-1232	ND	
	2nd Floor- Zone 10 Base of Rectangular Grill AHU-5-5			PCB-1242	ND	
	Total Area Wiped = 444 cm²			PCB-1248	ND	
				PCB-1254	ND	
				PCB-1260	**22**	**5**
				PCB-1262	ND	

EPA Surface Clearance Criteria = 10 ug/100 cm²

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WIPE SAMPLE RESULTS
FBI Academy
Building 5
Quantico, Virginia

SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (ug/wipe)	CONCENTRATION (ug/100cm2)
MRBFBI-81307-05		8/13/2007	EPA 8082	PCB-1016	ND	
				PCB-1221	ND	
				PCB-1232	ND	
	1st Floor- Zone 6 Inside Vertical Duct Duct AHU-5-5			PCB-1242	ND	
	Total Area Wiped = 435 cm²			PCB-1248	ND	
				PCB-1254	ND	
				PCB-1260	**1.9**	**0.57**
				PCB-1262	ND	
MRBFBI-81307-06		8/13/2007	EPA 8082	PCB-1016	ND	
				PCB-1221	ND	
				PCB-1232	ND	
	1st Floor- Zone 5 Inside Vertical Duct Duct AHU-5-5			PCB-1242	ND	
	Total Area Wiped = 435 cm²			PCB-1248	ND	
				PCB-1254	ND	
				PCB-1260	**3.6**	**0.83**
				PCB-1262	ND	
MRBFBI-81307-07		8/13/2007	EPA 8082	PCB-1016	ND	
				PCB-1221	ND	
				PCB-1232	ND	
	1st Floor- Zone 1 (?) Inside Vertical Ducts AHU-5-8			PCB-1242	ND	
	Total Area Wiped = 361 cm²			PCB-1248	ND	
				PCB-1254	ND	
				PCB-1260	**3.4**	**0.94**
				PCB-1262	ND	
MRBFBI-81307-08		8/13/2007	EPA 8082	PCB-1016	ND	
				PCB-1221	ND	
				PCB-1232	ND	
	1st Floor Zone 1 (?) Inside Vertical Ducts AHU-5-8			PCB-1242	ND	
	Total Area Wiped = 600 cm²			PCB-1248	ND	
				PCB-1254	ND	
				PCB-1260	**4.5**	**0.75**
				PCB-1262	ND	

EPA Surface Clearance Criteria = 10 ug/100 cm²

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WIPE SAMPLE RESULTS
FBI Academy
Building 5
Quantico, Virginia

SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (ug/wipe)	CONCENTRATION (ug/100cm2)
GLOVE BLANK	Blank of Gloves Used	8/12/2007	EPA 8082	PCB-1016	ND	–
				PCB-1221	ND	
				PCB-1232	ND	
				PCB-1242	ND	
				PCB-1248	ND	
				PCB-1254	ND	
				PCB-1260	ND	
				PCB-1262	ND	
MEDIA BLANK	Wipe Blank	8/16/2007	EPA 8082	PCB-1016	ND	
				PCB-1221	ND	
				PCB-1232	ND	
				PCB-1242	ND	
				PCB-1248	ND	
				PCB-1254	ND	
				PCB-1260	ND	
				PCB-1262	ND	

EPA Surface Clearance Criteria = 10 ug/100 cm²

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AHU BULK SAMPLE RESULTS
FBI Academy
Building 5
Quantico, Virginia

SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (mg/kg)
MRBFBI-81307-09	Duct Vibration Gasket #4 Duct Leaving AHU-5-7	8/14/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**320**
				PCB-1262	ND
MRBFBI-81307-13	Caulking on (Clear) AHU-5-7	8/14/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**450**
				PCB-1262	ND
MRBFBI-81307-14	Vibration Gasket on Unit AHU-5-7	8/14/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**450**
				PCB-1262	ND
MRBFBI-81407-01	Door Sealing Gaskets AHU-5-6	8/14/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**340**
				PCB-1262	ND

EPA Comparison Criteria = 50 mg/kg (ppm) *40 CFR 761.3 Definitions: Excluded Materials*

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AHU BULK SAMPLE RESULTS
FBI Academy
Building 5
Quantico, Virginia

SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (mg/kg)
MRBFBI-81407-02	Lining (Insulation) Inside Unit AHU-5-6	8/14/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**99**
				PCB-1262	ND
MRBFBI-81407-03	Vibration Gasket on Unit AHU-5-6	8/14/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**510**
				PCB-1262	ND
MRBFBI-81407-04	Black Rubber Gasket Material on Unit AHU-5-6	8/14/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	19
				PCB-1262	ND
MRBFBI-81407-05	Vibration Gasket on Side of Duct AHU-5-6	8/15/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**145**
				PCB-1262	ND

EPA Comparison Criteria = 50 mg/kg (ppm) *40 CFR 761.3 Definitions: Excluded Materials*

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AHU BULK SAMPLE RESULTS
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SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (mg/kg)
MRBFBI-81407-07	Door Sealing Gaskets AHU-5-4	8/14/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**480**
				PCB-1262	ND
MRBFBI-81407-08	Lining (Insulation) Inside Unit AHU-5-4	8/14/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	16
				PCB-1262	ND
MRBFBI-81407-09	Black Rubber Gasket Material on Unit AHU-5-4	8/15/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	22
				PCB-1262	ND
MRBFBI-81407-10	Vibration Gasket on Unit AHU-5-4	8/15/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**2200**
				PCB-1262	ND

EPA Comparison Criteria = 50 mg/kg (ppm) *40 CFR 761.3 Definitions: Excluded Materials*

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AHU BULK SAMPLE RESULTS
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SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (mg/kg)
MRBFBI-81407-11	Vibration Gasket on Side of Duct AHU-5-4	8/15/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**220**
				PCB-1262	ND
MRBFBI 8807-1A	Gasket Fabric, Front Plate AHU-5-2	8/8/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**4100**
				PCB-1262	ND
MRBFBI 8807-4A	Caulking AHU-5-2	8/9/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	20
				PCB-1262	ND
MRBFBI 8807-5A	Vibration Gasket on Unit AHU--2	8/9/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**630**
				PCB-1262	ND

EPA Comparison Criteria = 50 mg/kg (ppm) *40 CFR 761.3 Definitions: Excluded Materials*

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AHU BULK SAMPLE RESULTS
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SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (mg/kg)
MRBFBI 8807-6A	Door Sealing Gasket(s) AHU-5-2	8/9/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**270**
				PCB-1262	ND
MRBFBI 8807-7A	Inside Lining (Insulation) AHU-5-2	8/9/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	9.8
				PCB-1262	ND
MRBFBI 8807-2B	Mastic Holding Insulation To Front Cover AHU-5-2	8/8/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**600**
				PCB-1262	ND
MRBFBI 8807-1B	Fiber Glass Insulation Inside Cover AHU-5-2	8/8/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**19000**
				PCB-1262	ND

EPA Comparison Criteria = 50 mg/kg (ppm) *40 CFR 761.3 Definitions: Excluded Materials*

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AHU BULK SAMPLE RESULTS
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SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (mg/kg)
MRBFBI 8807-8A	Black Rubber Panel Sealing Gasket AHU 5-9	8/9/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	7.6
				PCB-1262	ND
MRBFBI 8807-9A	Vibration Gasket Underside of Ducts AHU-5-9	8/9/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**410**
				PCB-1262	ND
MRBFBI 8807-10A	Insulation Inside AHU 5-9	8/9/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	5.2
				PCB-1262	ND
MRBFBI 81207-1	Door Sealing Gasket(s) AHU-5-9	8/12/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**420**
				PCB-1262	ND

EPA Comparison Criteria = 50 mg/kg (ppm) *40 CFR 761.3 Definitions: Excluded Materials*

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AHU BULK SAMPLE RESULTS
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SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (mg/kg)
MRBFBI 81207-2	Vibration Gasket on Unit AHU-5-9	8/12/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**300**
				PCB-1262	ND
MRBFBI 81207-5	Inside Lining (Insulation) in AHU-5-7	8/12/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	5.2
				PCB-1262	ND
MRBFBI 81207-6	Door Sealing Gasket(s) AHU-5-7	8/12/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**410**
				PCB-1262	ND
MRBFBI 81207-7	Black Rubber Panel Sealing Gasket AHU-5-7	8/12/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**14000**
				PCB-1262	ND

EPA Comparison Criteria = 50 mg/kg (ppm) *40 CFR 761.3 Definitions: Excluded Materials*

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AHU BULK SAMPLE RESULTS
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SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (mg/kg)
MRBFBI 81207-9	Black Door Sealing Gasket AHU-5-9	8/12/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	24
				PCB-1262	ND

EPA Comparison Criteria = 50 mg/kg (ppm) *40 CFR 761.3 Definitions: Excluded Materials*

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DUCT INSULATION SAMPLE RESULTS
FBI Academy
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SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (mg/kg)
MRBFBI-81407-13	Duct Insulation Down Stream Zone 7 AHU-5-4	8/15/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	3.8
				PCB-1262	ND
MRBFBI-81407-14	Duct Insulation Down Stream Zone 8 AHU-5-6	8/15/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	45
				PCB-1262	ND
MRBFBI-81307-10	Duct Insulation #4 Duct Leaving AHU-5-7	8/14/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	5.0
				PCB-1262	ND
MRBFBI-81307-11	Duct Insulation- Down Stream Duct #4 AHU-5-7	8/14/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	13
				PCB-1262	ND

EPA Comparison Criteria = 50 mg/kg (ppm) *40 CFR 761.3 Definitions: Excluded Materials*

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DUCT INSULATION SAMPLE RESULTS
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SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (mg/kg)
MRBFBI-81307-12	Duct Insulation- Down Stream 3rd Duct- Zone 6 AHU-5-9	8/14/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	1.9
				PCB-1262	ND
MRBFBI-81407-06	Inside Duct Lining Close to Unit AHU-5-6	8/15/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	30
				PCB-1262	ND
MRBFBI-81407-12	Inside Duct Lining Close to Unit AHU-5-4	8/15/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	ND
				PCB-1262	ND
MRBFBI 8807-11A	Inside Duct Lining Close to Unit AHU 5-9	8/9/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	24
				PCB-1262	ND

EPA Comparison Criteria = 50 mg/kg (ppm) *40 CFR 761.3 Definitions: Excluded Materials*

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PAINT SAMPLE RESULTS
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SAMPLE NUMBER	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD	ANALYTE	RESULT (mg/kg)
MRBFBI 8807-2A	Green Paint on Top of AHU-5-2	8/8/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**180**
				PCB-1262	ND
MRBFBI 8807-3B	White Paint From AHU-5-2	8/9/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**470**
				PCB-1262	ND
MRBFBI 81207-3	Green Paint on AHU-5-9	8/12/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	**83**
				PCB-1262	ND
MRBFBI 81207-4	White Paint on AHU-5-9	8/12/2007	EPA 8082	PCB-1016	ND
				PCB-1221	ND
				PCB-1232	ND
				PCB-1242	ND
				PCB-1248	ND
				PCB-1254	ND
				PCB-1260	18
				PCB-1262	ND

EPA Comparison Criteria = 50 mg/kg (ppm) *40 CFR 761.3 Definitions: Excluded Materials*

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